



7027-A

BEAM POWER TUBE

For high-fidelity audio-amplifier applications

Supersedes Type 7027

7027-A

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC) 6.3 volts

Current 0.9 amp

Direct Interelectrode Capacitances:⁰

Grid No.1 to plate. 1.5 μ f

Grid No.1 to cathode & grid No.3,

grid No.2, and heater 10 μ f

Plate to cathode & grid No.3,

grid No.2, and heater 7.5 μ f

Characteristics, Class A₁ Amplifier:

Plate Voltage 250 volts

Grid-No.2 Voltage 250 volts

Grid-No.1 Voltage -14 volts

Plate Resistance (Approx.) 22500 ohms

Transconductance 6000 μ mhos

Plate Current 72 ma

Grid-No.2 Current 5 ma

Mechanical:

Operating Position. Any

Maximum Overall Length. 4.62"

Maximum Seated Length 4.06"

Maximum Diameter. 1.63"

Bulb. T12

Base. Small-Wafer Octal 8-Pin with "950" Sleeve

(JEDEC Group 1, No.B8-191)

Basing Designation for BOTTOM VIEW. 8HY

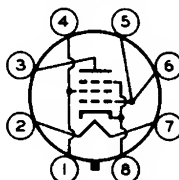
Pin 1 - Grid No.2

Pin 2 - Heater

Pin 3 - Plate

Pin 4 - Grid No.2

Pin 5 - Grid No.1



Pin 6 - Grid No.1

Pin 7 - Heater

Pin 8 - Cathode,
Grid No.3

PUSH-PULL AF POWER AMPLIFIER — Class AB₁

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE 600 max. volts

GRID-No.2 (SCREEN-GRID) VOLTAGE 500 max. volts

GRID-No.2 INPUT 5 max. watts

PLATE DISSIPATION 35 max. watts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with

respect to cathode. 200 max. volts

Heater positive with

respect to cathode. 200[▲] max. volts

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Typical Operation with Fixed Bias:*Values are for 2 tubes*

Plate Voltage	400	450	540	volts
Grid-No.2 Voltage	300	350	400	volts
Grid-No.1 (Control-Grid) Voltage*	-25	-30	-38	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	50	60	76	volts
Zero-Signal Plate Current	102	95	100	ma
Max.-Signal Plate Current	152	194	220	ma
Zero-Signal Grid-No.2 Current	6	3.4	5	ma
Max.-Signal Grid-No.2 Current	17	19.2	21.4	ma
Effective Load Resistance (Plate to plate).	6600	6000	6500	ohms
Total Harmonic Distortion	2	1.5	2	%
Max.-Signal Power Output.	34	50	76	watts

Typical Operation with Cathode Bias:*Values are for 2 tubes*

Plate Supply Voltage.	400	380	425	volts
Grid-No.2 Supply Voltage.	300	380	425	volts
Cathode Resistor.	200	180	200	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage	57	68.5	86	volts
Zero-Signal Plate Current	112	138	150	ma
Max.-Signal Plate Current	128	170	196	ma
Zero-Signal Grid-No.2 Current	7	5.6	8	ma
Max.-Signal Grid-No.2 Current	16	20	20	ma
Effective Load Resistance (Plate to plate).	6600	4500	3800	ohms
Total Harmonic Distortion	2	3.5	4	%
Max.-Signal Power Output.	32	36	44	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:*

For fixed-bias operation.	0.1 max.	megohm
For cathode-bias operation.	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER — Class AB₁*Grid No. 2 of each tube connected to tap on
plate winding of output transformer***Maximum Ratings, Design-Maximum Values:**

PLATE AND GRID-No.2 (SCREEN-GRID)			
SUPPLY VOLTAGE.	600 max.	volts	
GRID-No.2 INPUT	4.5 max.	watts	
PLATE DISSIPATION	35 max.	watts	
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode.	200 max.	volts	
Heater positive with respect to cathode.	200 [▲] max.	volts	



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Typical Operation:

Values are for 2 tubes

Plate Supply Voltage.	410	volts
Grid-No.2 Supply Voltage.	*	volts
Cathode Resistor.	220	ohms
Peak AF Grid-No.1-to-Grid-No.1 Voltage. .	68	volts
Zero-Signal Cathode Current	134	ma
Max.-Signal Cathode Current	155	ma
Effective Load Resistance (Plate to plate).	8000	ohms
Total Harmonic Distortion	1.6	%
Max.-Signal Power Output.	24	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:•

For cathode-bias operation. 0.5 max. megohm

○ Without external shield.

▲ The dc component must not exceed 100 volts.

● The type of input coupling network used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

* Obtained from taps on the primary winding of the output transformer. The taps are located on each side of the center-tap (B+) so as to apply 43 per cent of the plate signal voltage to grid-No.2 of each output tube.

OPERATING CONSIDERATIONS

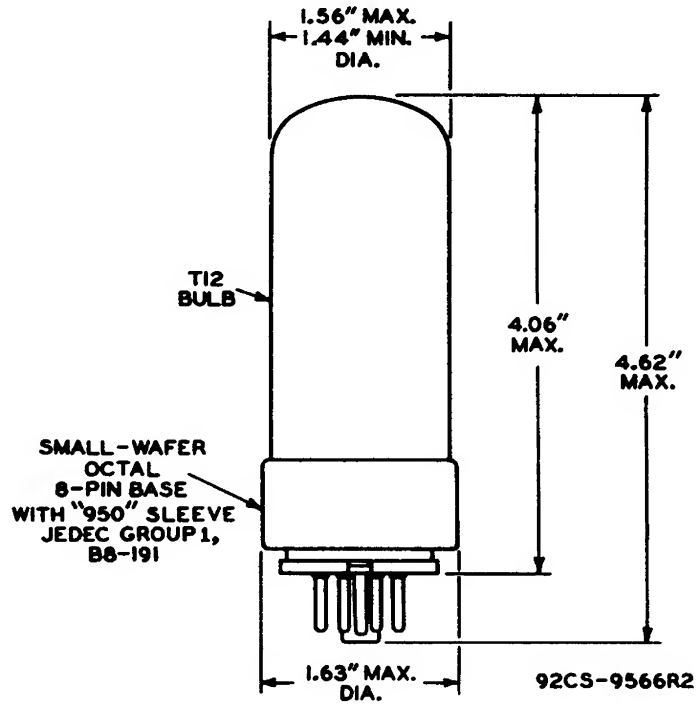
The *bulb* becomes hot during operation. To insure adequate cooling, therefore, it is essential that free circulation of air be provided around the 7027-A.

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AVERAGE PLATE CHARACTERISTICS

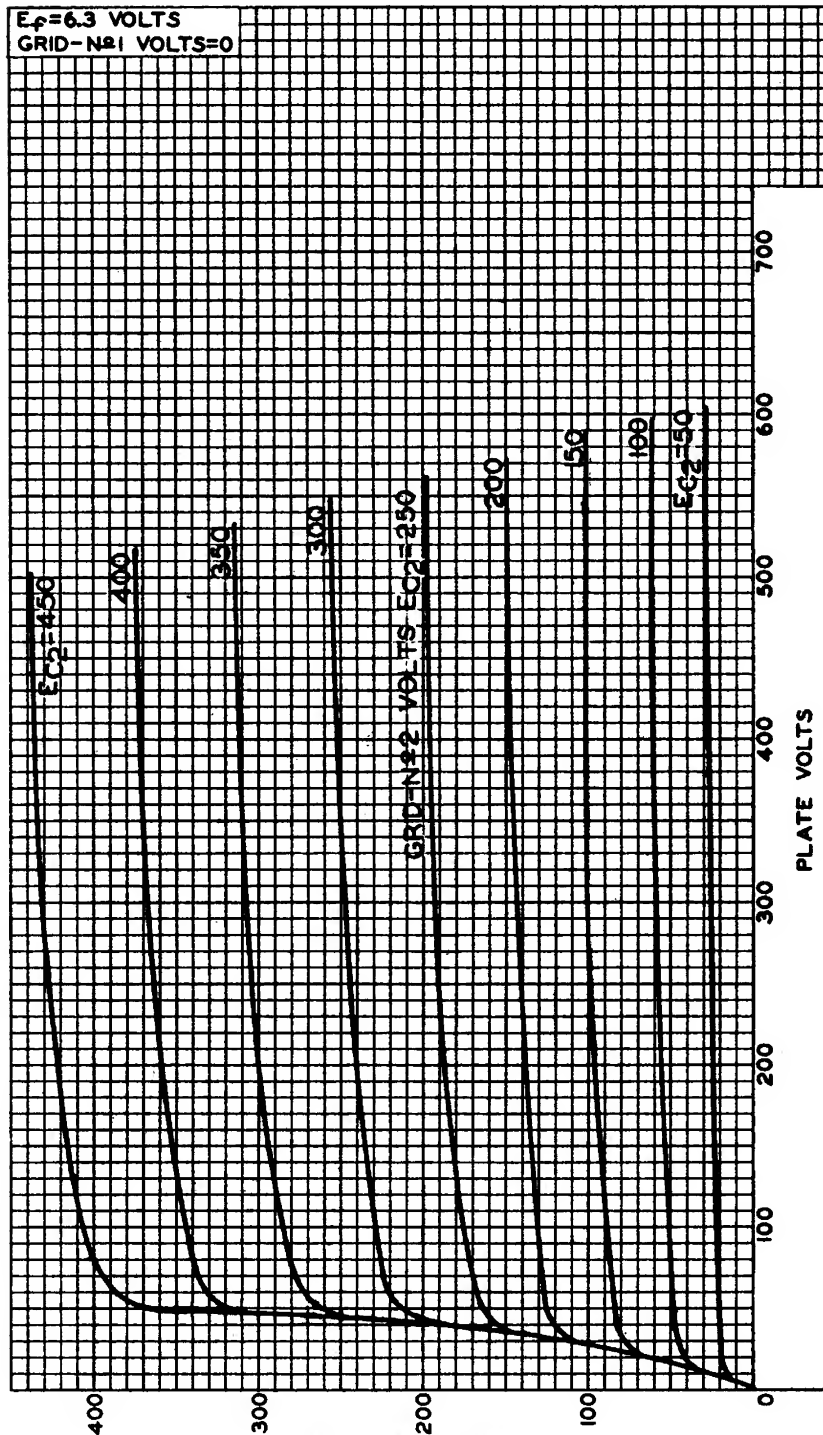


PLATE MILLIAMPERES
ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-10132

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AVERAGE CHARACTERISTICS

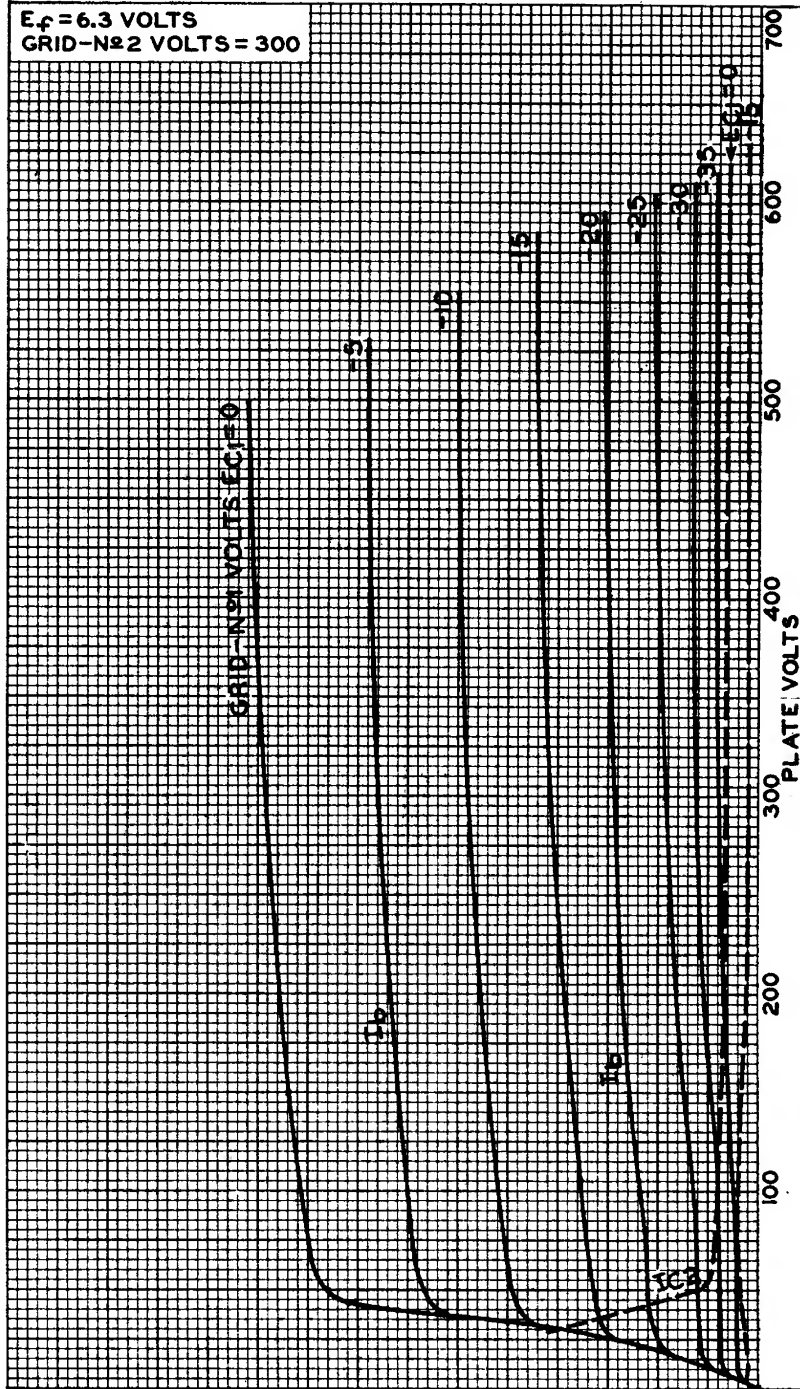


PLATE (I_b) OR GRID-N#2 (I_{c2}) MILLIAMPERES

ELECTRON TUBE DIVISION

92CM-10133

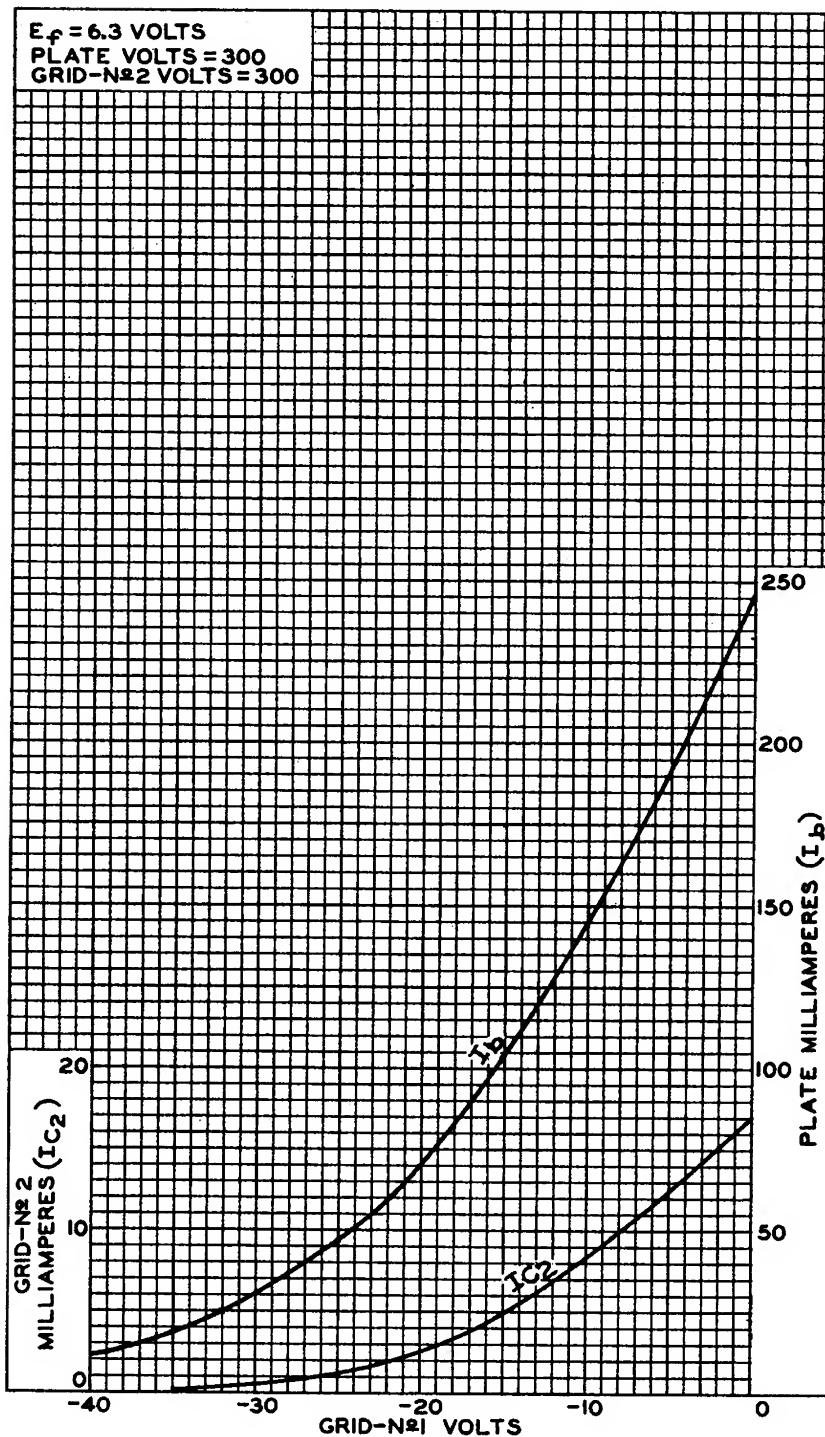
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY



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AVERAGE CHARACTERISTICS

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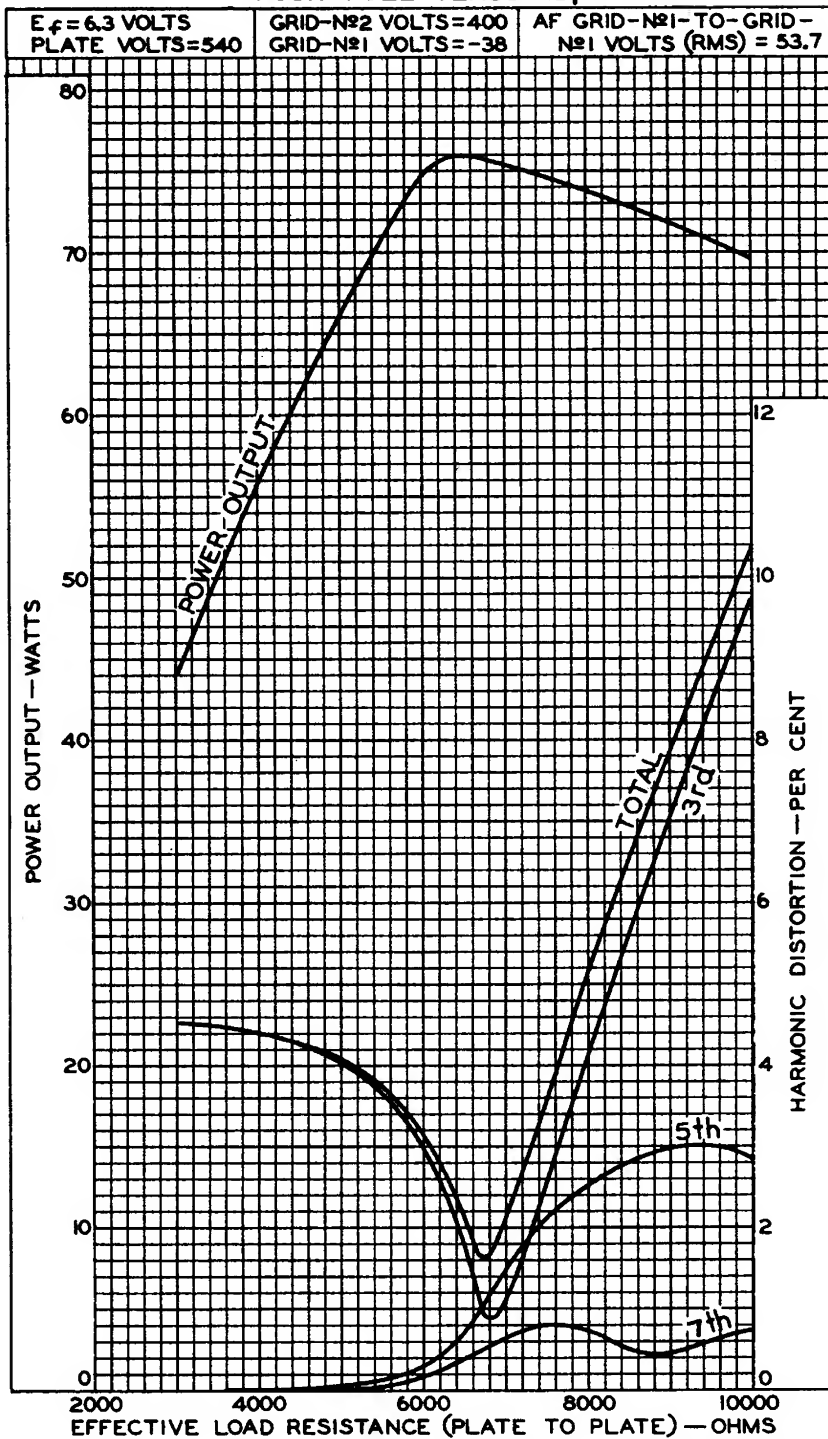


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OPERATION CHARACTERISTICS
PUSH-PULL CLASS AB₁





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AVERAGE PLATE CHARACTERISTICS TRIODE CONNECTION

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$E_f = 6.3$ VOLTS
GRID #2 CONNECTED TO PLATE.

